

CLAIMS

Therefore, having thus described the invention, at least the following is claimed:

1. A graphics system for processing pixel data associated with a predetermined pixel region comprising:

memory;

controller configured to identify pixel data associated with a predetermined pixel region that is to be stored to said memory, (and to associate a predetermined reference pixel with said pixel region; and

said controller is further configured to store pixel data representing values of said predetermined reference pixel to said memory and to set a fill check-bit associated with said pixel region where the values of all pixels within said pixel region are the same as said data representing said predetermined reference pixel.

2. The system of claim 1, wherein said controller is further configured to store said pixel data to said memory where the values of pixels within said pixel region are not the same as the value of said predetermined reference pixel.

3. The system of claim 2, wherein said controller is configured to store pixel data that is associated with a predetermined pixel region to said memory, in a first block of sequential memory addresses that are associated with said predetermined pixel region.

4. The system of claim 2, wherein said reference pixel data is stored in said first block of sequential memory addresses that are associated with said predetermined pixel region.

5. The system of claim 2, wherein said reference pixel data is stored in a second block of sequential memory addresses that are associated with said predetermined pixel region.

1 6. The system of claim 1, wherein said fill check bit is stored to a memory
2 location that is associated with said first block of sequential memory addresses.

1 7. The system of claim 1, further comprising a processor that is configured to
2 convert geometric data into said pixel data, said geometric data is representative of a
3 surface within a scene to be displayed.

1 8. A graphics system for processing pixel data that is associated with a
2 predetermined pixel region, the system comprising:

3 memory;

4 controller configured to check a fill check bit that is associated with a pixel
5 region, to determine whether it is set to indicate that all pixel data within said pixel region
6 is the same as a predetermined reference pixel that is associated with said pixel region;
7 and

8 said controller is further configured to retrieve said reference pixel data from said
9 memory and write said reference pixel data to a sequential block of memory associated
10 with said pixel region for each pixel within said pixel region, where said fill check bit
11 indicates that all pixel data within said pixel region is the same as said reference pixel
12 data.

1 9. The system of claim 8, wherein said controller is further configured to
2 write pixel data to memory associated with said pixel region, for all pixels within said
3 pixel region, where said fill check bit indicates that all pixels within said region are not
4 the same as said predetermined reference pixel.

1 10. The system of claim 8, wherein said memory comprises a first block of
2 sequential memory addresses associated with said predetermined pixel region.

1 11. The system of claim 8, wherein said controller is further configured to
2 compose said reference pixel data retrieved from said memory.

1 12. The system of claim 11, wherein said controller is further configured to
2 store said composed reference pixel data to a second predetermined block of sequential
3 memory addresses, and to retrieve said composed reference pixel data from said second
4 predetermined block and output a stream of composed pixel data for display.

1 13. The system of claim 11, wherein said controller is further configured to
2 store said composed reference pixel to memory.

1 14. The system of claim 11, wherein said controller is further configured to
2 retrieve said composed reference pixel data from memory and output composed pixel data
3 for display on an associated display device.

1 15. The system of claim 12, wherein said first block of sequential memory
2 addresses corresponds to a predetermined pixel region of an associated display device.

1 16. The system of claim 15, wherein said predetermined pixel region
2 corresponds to a predetermined number of pixels of said associated display device.

1 17. The system of claim 12, wherein said second predetermined block of
2 sequential memory addresses corresponds to a predetermined scan line of said associated
3 display device.

1 18. The system of claim 12, wherein said memory corresponds to a portion of
2 a predetermined scan line of said associated display device.

1 19. The system of claim 12, wherein said memory corresponds to a plurality of
2 predetermined scan lines of said associated display device.

1 20. The system of claim 12, wherein said memory comprises a block of 32-bit
2 memory locations.

1 21. A method of processing pixel data associated with a predetermined pixel
2 region, said method comprising the steps of:

3 identifying all pixel data associated with a predetermined pixel region to be stored
4 to memory;

5 associating a predetermined reference pixel with said pixel region;

6 storing pixel data for said reference pixel to memory; and

7 setting a fill check bit associated with said pixel region to indicate that the values
8 of all pixels within said pixel region are the same as said predetermined reference pixel.

1 22. A method of processing pixel data associated with a predetermined pixel
2 region, said method comprising the steps of:

3 checking a fill bit associated with said pixel region to determine whether it is set
4 to indicate that all pixel data within said pixel region is the same as a predetermined
5 reference pixel associated with said pixel region; and

6 retrieving said reference pixel data from memory for each pixel within said pixel
7 region where said fill check bit indicates that all pixel data within said pixel region is the
8 same as said reference pixel data.

1 23. The method of claim 22, further comprising the step of composing said
2 retrieved reference pixel data.

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